

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) Apparatus for measuring the efficiency of transport of modem relay packets over a packet network, comprising:

means for connecting to a first gateway of said modem relay connection;

means for connecting to a second gateway of said modem relay connection;

a computing device connected to each of said first and second connecting

means, and

for running at least one terminal program for at least one of said gateways;

for providing a reference modem data stream at a known throughput rate to at least one of said gateways; and

for receiving a transported modem data stream from a second one of said gateways after said reference modem data stream has passed through said gateways and said packet network; and

means for determining the transport efficiency of said packet network by comparison of said known throughput rate of said reference modem data stream to said determined throughput rate of said received modem data stream.

2. (Original) The apparatus of claim 1, wherein:

said terminal program runs a Z-modem protocol for generating said modem data stream at a known throughput rate.

3. (Original) The apparatus of claim 1, wherein said computing device:
 - runs a terminal program for each of said gateways;
 - provides a reference modem data stream at a known throughput rate to each of said gateways;
 - receives a transported modem data stream from each of said gateways after said reference modem data stream has passed through said gateways and said packet network; and
 - determines the transport efficiency of said packet network by comparison of said known throughput rate of said reference modem data stream to said determined throughput rate of said received modem data stream.
4. (Original) The apparatus of claim 1, wherein said throughput efficiency is measured after said gateways have negotiated appropriate protocols and have established a steady-state connection over said packet network.
5. (Original) The apparatus of claim 1, wherein said modem relay connection is established across a network.
6. (Original) The apparatus of claim 1, wherein said modem relay connection is established across a network simulator.

7. (Original) The apparatus of claim 6, further comprising:
means for control of network transport parameters of said network simulator.
8. (Original) The apparatus of claim 7, wherein said controlled parameters include packet loss and packet delay.
9. (Original) The apparatus of claim 8, wherein said parameters can be varied to selectively simulate uniform distribution of packet loss and random distribution of packet loss.
10. (Original) The apparatus of claim 7,further comprising:
means for providing alternative packet protocol algorithms to at least one of said gateways and measuring comparative throughput efficiency while maintaining fixed network conditions to provide a common evaluation reference.
11. (Original) The apparatus of claim 1, wherein:
said determination of said transport efficiency includes at least two iterative repetitions of said provision of said reference modem data stream and said reception of said transported modem data stream and said comparison of said known throughput rate of said reference modem data stream to said determined throughput rate of said received modem data stream; and

wherein said determination is based upon the average efficiency determined after a series of said iterations.

12. (Currently Amended) Method A method for measuring the efficiency of transport of modem relay packets over a packet network, comprising ~~the steps of:~~
- providing a reference modem data stream at a known throughput rate to a first one of said a plurality of gateways of said a modem relay connection; and
- receiving a transported modem data stream from a second one of said gateways after said reference modem data stream has passed through said gateways and said packet network; and
- comparing said known throughput rate of said reference modem data stream to said determined throughput rate of said received modem data stream to determine said a network transport efficiency.

13. (Currently Amended) The method of claim [[14]] 12, further comprising ~~the steps of:~~
- collecting a group of data representative of the network throughput efficiency under a number of network conditions and corresponding to a plurality of known file transfer protocols;
- determining the network throughput efficiency values corresponding to a the plurality of file transfer protocols and determining the average rate for a given protocol

with given network conditions; and

generating a representation indicative of the relationship between modem relay system design and packet transport efficiency across said network.

14. (New) A method to measure throughput efficiency of low speed modem relay over packet networks, comprising:

establishing a modem call over a modem relay system between a first modem to a second modem over a network through a modem relay system comprising a first gateway, connected locally to said first modem over a PSTN line, and a second gateway, connected through a packet network to said first gateway and connected locally to said second modem through a PSTN line;

transmitting a demodulated data stream of said modem call over said packet network;

establishing a steady-state connection over the packet network;

generating a reference modem data stream throughput rate;

measuring modem data stream reception rate during said modem call for a particular protocol;

measuring throughput efficiency of said modem relay by comparing said modem data stream reception rate with said reference modem data stream.